LINDANE

Lindane is an insecticide which is used for both seed and soil treatment. Its use in the past has been on a wide variety of food and nonfood sites, although its use appears to be dwindling with increased regulation. It has been used on a broad spectrum of insect pests, including various types of mites, beetles, worms, aphids and flies. The registrant plans to maintain registration of lindane for pet care, industrial timber and lumber treatment, and seed treatment of beets, carrots, cereal grain, cotton, leafy vegetables, legumes and radishes.

The largest food crop use of lindane that was reported was for pecans, with an average of 18,000 pounds of a.i. applied. This use accounted for just over 50 percent of application to food crops. The largest food use acreage was for corn (64,000 acres, or almost one-third the acres treated).

Lindane is used for seed treatment of small grains, field corn and sorghum. Ten percent of sorghum seed is reported to be treated with lindane, making it the largest seed treatment use. In addition, lindane products were found to be present in 2 percent of households in a survey targeting home and garden pesticide use. Lumber use data was obtained for 1996 and is estimated at less than 5,000 pounds a.i. According to a representative of the registrant, this product was discontinued in 1997, and there have been no sales since 1996.

There was no additional information obtained by the Agency on this chemical in the QUA+ process.

Quantitative Usage Analysis: Lindane Case #: 315 AI#: 9001 Analyst: Istanbul Yusuf January 11, 1998

Site	Acres (000) Grown	Acres (000) Treated Wtd Avg	Acres (000) Treated Est Max	% of Crop Treated Wtd Avg	% of Crop Treated Est Max	Lb ai (000) Applied Wtd Avg	Lb ai (000) Applied Est Max	Average Application Rate lb ai/ A/yr	Average Application Rate # app /year	Average Application Rate lb ai/ A/app	States of Most Usage % of total lb ai used on this site
Alfalfa	23,949	0	2	0	0	0	0	0.1	4.3	0.0	CA 100%
Apples	572	0	1	0	0	0	0	0.3	1.0	0.3	IN 100%
Barley	7,505	7	14	0	0	0	1	0.0	1.0	0.0	MN ND UT 92%
Beans, Green	304	1	1	0	0	0	0	0.0	1.0	0.0	CA 100%
Cherries	128	0	0	0	0	0	0	1.0	1.1	0.9	CA 100%
Citrus	949	1	3	0	0	0	1	0.2	1.0	0.2	FL CA 100%
Cole Crops*	313	0	0	0	0	0	0	1.0	1.0	1.0	OH 100%
Corn	72,284	64	135	0	0	3	12	0.0	1.0	0.0	KS FL MD DE IA MI 76%
Cotton	12,689	5	10	0	0	2	4	0.4	1.6	0.2	GA CA AR 89%
Cucurbits*	285	0	1	0	0	0	1	0.3	1.1	0.3	SC CA NC 86%
Eggplant	4	0	0	1	7	0	0	0.7	1.0	0.7	CA 100%
Flax	188	0	1	0	0	0	0	0.0	1.0	0.0	NA
Grapes	825	0	1	0	0	0	1	0.0	1.0	0.0	NA
Hay, Other	33,427	0	0	0	0	0	0	1.0	1.0	1.0	AR FL TN 100%
Lettuce	268	2	2	1	1	1	5	0.3	1.0	0.3	CA 100%
Lots/Farmsteads/etc	24,815	1	3	0	0	1	3	1.1	1.3	0.9	MO NE TN TX AL AR 75%
Melons*	368	1	2	0	0	0	1	0.1	1.0	0.1	CA NC 100%
Oats/Rye	6,133	1	2	0	0	0	0	0.0	1.0	0.0	ND PA 100%
Peaches	212	0	0	0	0	0	0	1.0	1.0	1.0	FL MS 100%
Pecans	488	45	68	9	14	18	45	0.4	1.2	0.3	GA TX OK 86%
Peppers, Sweet	77	0	0	1	1	0	3	0.8	1.0	0.8	CA 100%
Plums & Prunes	140	0	0	0	0	0	0	0.7	1.5	0.4	OR 100%

Sorghum	11,280	7	14	0	0	0	0	0.0	1.0	0.0	TX 100%
Soybeans	62,879	2	3	0	0	0	0	0.1	1.3	0.1	FL GA 96%

Quantitative Usage Analysis: Lindane **Case #: 315** **AI#: 9001** **Analyst: Sherry Wise** **March 16, 1998**

Site	Acres (000) Grown	Acres (000) Treated Wtd Avg	Acres (000) Treated Est Max	% of Crop Treated Wtd Avg	% of Crop Treated Est Max	Lb ai (000) Applied Wtd Avg	Lb ai (000) Applied Est Max	Average Application Rate lb ai/ A/yr	Average Application Rate # app /year	Average Application Rate lb ai/ A/app	States of Most Usage % of total lb ai used on this site
Spinach, Fresh	19	0	0	1	1	0	1	0.5	1.0	0.5	CA 100%
Stone-Like Fruit, Other*	189	1	2	1	1	2	11	1.5	2.8	0.5	FL 100%
Sugar Beets	1,415	1	2	0	0	0	4	0.1	1.0	0.1	NE CA 100%
Sweet Corn	784	0	0	0	0	0	0	0.0	1.0	0.0	NA
Tobacco	695	0	2	0	0	0	1	0.4	1.2	0.4	GA TN KY 87%
Tomatoes	502	1	1	0	0	1	22	1.0	1.0	1.0	FL 100%
Wheat, Spring	20,799	21	90	0	0	2	8	0.1	1.0	0.1	MN 82%
Wheat, Winter	45,854	6	12	0	0	0	1	0.1	1.0	0.1	MT KS ND 93%
Woodland	62,825	7	24	0	0	2	4	0.2	1.4	0.2	MI PA VA GA MD NJ 88%
Total (Agriculture)		178	287			35	82				

	Bushels Planted (000)	Bushels Treated (000)	CWT Planted (000)	CWT Treated (000)	Percent Seed Treated
Seed Treatment					
Small grains	141,000	9,300	----	----	7
Field corn	----	----	10,400	620	6
Sorghum	----	----	770	79	10

	Total Households (000)	Households with Product (000)	Percent of Households with Product	Number of Products** Indoors (000)	Outdoors (000)
Residential Use	84,573	1,514	2	542	1,355

Other	Pounds A.I.
Lumber	<5,000

COLUMN HEADINGS

Wtd Avg = Weighted average--the most recent years and more reliable data are weighted more heavily.
Est Max = Estimated maximum, which is estimated from available data.
Average application rates are calculated from the weighted averages.

NOTES ON TABLE DATA

Usage data primarily covers 1987 - 1996. Seed treatment data covers 1990. Residential use data is from 1989.
Lumber data is from 1996 (no sales were made in 1997, when the product was discontinued).
Calculations of the above numbers may not appear to agree because they are displayed as rounded.
to the nearest 1000 for acres treated or lb. a.i. (Therefore 0 = < 500)
to the nearest whole percentage point for % of crop treated. (Therefore 0% = < 0.5%)
NA indicates data is not available.

*** Other/Crop Groups**

Cole Crops includes broccoli, Brussels sprouts, cabbage, cauliflower, mustard greens, collards, bok choy, and chard.
Cucurbits includes cucumber, squash, and pumpkin.
Melons include cantaloupe, watermelon, honeydew, muskmelon, and winter melon.

Stone Fruits, Other includes apricots, avocados, dates, nectarines, olives, coconuts, mangoes, and feijoa.

****Number of Products**

Indoors includes products for pets, houseplants, greenhouses and other inside areas.
Outdoors includes products for lawn, edible fruit and nut trees, grapevines, other food crops, roses and other ornamentals, and other outside areas.

SOURCES: EPA data (1987-1996), USDA/NASS (1990-1996), California (1993-1995), Technomic Consultants International (1990), USEPA National Home and Garden Pesticide Use Survey (1993) and National Center for Food and Agricultural Policy (1992).